

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): ~~[[An]] The insulin regulator construct, comprising:~~  
construct of Claim 9, wherein the nucleotide sequence comprises:

- a) a glucose response element (GIRE) of a liver-pyruvate (L-PK) gene promoter; and
- b) an insulin-sensitive element of an insulin-like growth factor binding protein-1 (IGFBP-1) basal promoter.

Claim 2 (original): The insulin regulator construct of Claim 1, wherein:

said glucose response element comprises a hepatic nuclear factor-4 (HNF-4) binding site and a glucose responsive site.

Claim 3 (original): The insulin regulator construct of Claim 2, further comprising:

a plurality of said glucose response elements.

Claim 4 (original): The insulin regulator construct of Claim 2, wherein:

the sequence of said HNF-4 binding site and said glucose responsive site is in a native orientation.

Claim 5 (original): The insulin regulator construct of Claim 2, wherein:

the sequence of said HNF-4 binding site and said glucose responsive site is reversed from a native orientation.

Claim 6 (original): The insulin regulator construct of Claim 1, wherein:

said glucose response element is inserted upstream of said insulin-sensitive element in an insulin-like growth factor binding protein-1 (IGFBP-1) basal promoter.

Claim 7 (original): The insulin regulator construct of Claim 1, wherein:

said glucose response element comprises a nucleotide sequence set forth in SEQ ID NO.: 1.

Claim 8 (original): The insulin regulator construct of Claim 1, wherein:

said insulin-sensitive element comprises a nucleotide sequence set forth in SEQ ID NO.: 2.

Claim 9 (currently amended): An insulin regulator construct, comprising:

- a) a nucleotide sequence set forth in one of SEQ ID NO.: 3, SEQ ID NO.: 4, SEQ ID NO.: 5, and SEQ ID NO.: 6[.]; and
- b) a sequence encoding insulin or proinsulin operably linked to the promoter element of said construct.

Claim 10 (currently amended): The insulin regulator construct of Claim [[1]] 9, which is not stimulated by exposure to lactate or fructose.

Claim 11 (currently amended): The insulin regulator construct of Claim [[1]] 9, which is stimulated by exposure to glucose and inhibited by exposure to insulin.

Claim 12 (currently amended): A vector comprising the construct of Claim [[1]] 9.

Claim 13 (currently amended): An adenoviral vector comprising the construct of Claim [[1]] 9.

Claim 14 (currently amended): [A transgene comprising the] The construct of Claim [[1]] 9, wherein said construct comprises a transgene.

Claim 15 (currently amended): A pharmaceutical composition comprising the construct of Claim [[1]] 9 and a pharmaceutically acceptable carrier or diluent.

Claim 16 (canceled)

Claim 17 (withdrawn): A method of treating or preventing diabetic conditions in a subject by administering an effective amount of the construct of Claim 1.

Claim 18 (withdrawn): A method of regulating insulin production in a subject by administering an effective amount of the construct of Claim 1.

Claim 19 (withdrawn): A method of modulating hyperglycemia, while avoiding severe hypoglycemia, in a subject by administering an effective amount of the construct of Claim 1.

Claim 20 (withdrawn): A method of increasing fat catabolism in a subject by administering an effective amount of the construct of Claim 1.

Claim 21 (withdrawn): A method of reducing protein catabolism in a subject by administering an effective amount of the construct of Claim 1.